NEW ONA SERVICES THROUGH SS7, ISDN, IN

April 15, 2000

The Commission's December 19, 1991 Order reviewing Open Network Architecture plans (CC Docket No. 88-2) directed each BOC to provide annual reports on new ONA services available through SS7, ISDN, and IN, and plans to provide these services.

In this report, BellSouth describes its plans for the Common Channel Signaling/Signaling System 7 (CCS7) infrastructure, as well as ISDN and the Advanced Intelligent Network (AIN) technologies and the services that these platforms support.

BellSouth continues to deploy these technologies to modernize the embedded network, improve efficiency, enhance customer control and flexibility, and to enable the rapid and uniform deployment of new services.

The availability of the associated ONA services is dependent on the services meeting the Commission's four selection screening criteria of market demand, technical feasibility, cost feasibility, and utility to ESPs. Additional legal, state or federal regulatory, or public policy considerations may also apply.

The ESP requests that can potentially be met via each of the subject technologies are discussed in their respective sections or in the "ESP Request Analysis" near the end of this report.

COMMON CHANNEL SIGNALING

Common Channel Signaling refers to a signaling network based on the American National Standards Institute (ANSI) T1S1 Committee's Signaling System 7 protocol. CCS7 employs "out-of-band" signaling that carries call-related information over a facility separate from the voice path.

DEPLOYMENT PLANS

BellSouth has deployed this infrastructure throughout its nine state territory. CCS7 is now available to 100% of the access lines in the region. Table 1 in Report #4 provides a summary of BellSouth's current and projected CCS7 deployment.

BELLSOUTH'S CCS7 OFFERINGS

As previously reported, BellSouth's CCS7 offerings include Caller ID Deluxe, which provides Calling Name Delivery. This is a caller identification service that allows the subscriber to view the name of the calling party on a separate display device or integrated set before the call is answered. Tariffs for Caller ID - Deluxe are effective in all nine BellSouth states. In addition to Caller-ID, BellSouth also deployed its Call Waiting - Deluxe. Call Waiting - Deluxe works in conjunction with Caller-ID by allowing subscribers to see the name and number of the calling party in an off-hook condition. The subscriber then has several disposition options to handle the call. Tariffs for Call Waiting - Deluxe are effective in all nine BellSouth states.

Existing CCS7 offerings include the family of BellSouth's TouchStar® services and are listed in previous ONA reports, applicable state tariffs, and the ONA Services User Guide. These features are available on an individual, unbundled basis as BSEs and/or CNSs and satisfy the following ESP capability requests:

NC #7	Call Forwarding with Call Screening
NC #9	Call Forwarding with Called and Calling Number
NC #21	Screening (Selective Call Reject)
NC #22	Calling Directory Number Delivery
NC #28	CLASS™ Features Interoffice
NC #82	Distinctive Ringing

CCS7 NETWORK INTERCONNECTION/CCSAC

As previously reported, BellSouth has an effective interstate access tariff for Common Channel Signaling Access Capability (CCSAC) network interconnection on Feature Group D service.

CCSAC is deployed in all BellSouth LATAs. As previously reported, 100% CCSAC deployment in all CCSAC-capable offices has been achieved. Table 2 in Report #4 reflects CCSAC deployment in BellSouth by market areas.

Since CCSAC is not utilized by all carriers in all locations, both multi-frequency and CCS7 signaling are currently supported in BellSouth's network.

BellSouth has completed the modification of its CCSAC tariff to conform to the Commission's view of unbundling the SS7 signaling link and the STP port from the access facility. This new structure supports call setup as well as future evolution to intelligent network services.

ADDITIONAL FEATURE AVAILABILITY

Other services made available via interconnected CCS7 networks include the Alternate Billing Service and 800 Data Base Service. The 800 Data Base Service is tariffed and effective in the interstate access tariff and the intrastate access tariffs in all nine BellSouth states. Alternate Billing Service, which was tariffed in 1992, provides toll fraud protection for calling card, bill-to-third-number, and collect calls.

ESP REQUESTS MET WITH CCS7

Although CCS7 is a network infrastructure architecture, it provides a framework that is the foundation for many useful services. Many of the services also require an additional layer of network development, such as ISDN and AIN. However, the services which are generally associated with CCS7, such as the TouchStar services and CCSAC, do provide functionality that is useful to ESPs and others. As stated earlier, the TouchStar services meet several ESP requests.

The "ESP Request Analysis" near the end of this report enumerates several ESP requests that may be met by the use and development of CCS7.

ISDN

ISDN is a digital network with signaling, switching and transport capabilities supporting a wide range of customer services over a single digital interface. The capabilities of ISDN and its development history are detailed in various industry documents and in BellSouth's ONA amendment filed on April 15, 1991.

DEPLOYMENT PLANS

BellSouth has effective tariffs for Basic Rate ISDN throughout the nine state region. Basic Rate ISDN is tariffed as ISDN - Business Service and ISDN - Residence Service. Primary Rate ISDN is also tariffed and effective in all nine BellSouth states.

In 1994, BellSouth established a plan to extend ISDN - Business Service, ISDN - Residence Service, and Primary Rate ISDN to customers served by non-ISDN equipped central offices within certain exchanges. If a customer requests ISDN service, and his local serving central office is not equipped with ISDN, service may be provided from a pre-designated ISDN "host" office in his exchange. This Alternate Network Serving Arrangement (ANSA) provides the inter-office ISDN without the customer incurring Foreign Central Office (FCO) charges.

The projected deployment of Basic Rate ISDN is summarized by market area in Table 3 of Report #4. The number of lines indicated are those lines with ISDN capability available. These projections are based on current plans, but are subject to change due to financial, regulatory, or other considerations.

Primary Rate ISDN deployment is summarized in Table 4 of Report #4. These projections are based on current plans, but are subject to change due to financial, regulatory, or other considerations. Deployment will continue mainly in areas where sufficient market demand exists.

National ISDN is a program to establish a platform of basic network building blocks upon which additional services driven by end user needs can be developed and offered in a uniform format on a nationwide basis within a multi-vendor operating environment. It began with National ISDN-1 in late 1992. Standardization for National ISDN-2 began in late 1993. National ISDN provides a planning process that will determine the list of requested features and services to be included in versions of National ISDN.

The National ISDN planning process includes active participation from a number of key industry groups that have an interest in ISDN development and deployment, for example, the North American ISDN Users' Forum (NIUF). This group includes representatives from the switch and CPE vendor community, Interexchange Carriers, Local Exchange Carriers, and large business

users. Feature selection is done on an open basis and any industry member may propose features to be considered for a particular National ISDN platform.

BellSouth supports National ISDN -1 and subsequent versions. Deployment of National ISDN -1 and 2 is now underway. National ISDN will be enhanced on a going forward basis with National ISDN upgrades.

ISDN SERVICES

The ISDN services that have been tariffed and deployed in BellSouth include the following circuit switched voice, circuit switched data and packet switched data capabilities:

1) Alternate Voice/Data
   - Circuit Switched Voice
   - Circuit Switched Data
   - Circuit Switched Voice or Data
   - Circuit Switched Voice and Data
     (requires two B channels)
2) Dedicated High Speed Packet Switched Data
3) On-Demand High Speed Packet Switched Data
4) Low Speed Packet Switched Data (LSPSD)

Features may be added to the basic service capabilities of ISDN described above. The features available in BellSouth are:

FEATURES - CIRCUIT-SWITCHED VOICE (CSV)

1) Inspect (5ESS) - used to retrieve and display call related information
2) Calling/Called Number Display - Calling/Called Name Display (where available)
3) ISDN Intercom (ICOM)
4) Additional Call Appearances
5) Secondary-Only DNs (Shared and Non-Shared)
6) Shared Non-ISDN DN
7) Shared Primary DN
8) Multi-Line Hunting
9) Manual Exclusion
10) Privacy Release
11) 3-Way Conference, Drop, Hold and Transfer
12) 6-Way Conference, Drop, Hold and Transfer
13) Call Forwarding Variable
14) Call Forwarding Busy Line
15) Call Forwarding Don't Answer

16) Call Forwarding - Multiple Simultaneous
17) Call Pickup
18) Speed Calling
19) Message Waiting Indicator
20) Preferred Call Forwarding
21) Call Block
22) Call Selector
23) Repeat Dialing
24) Call Tracing
25) Call Return
26) Automatic Line/Direct Connect
27) Make Set Busy
28) Station Restriction
29) Selective Call Acceptance

FEATURES - CIRCUIT SWITCHED DATA (CSD)

1) Circuit Switched Data Call Hunting (5ESS & EWSD) - allows multi-line hunting with CSD capability.
2) Call Forwarding (5ESS & EWSD)
3) Circuit Switched Data Call Hunting (DMS100)

FEATURES - PACKET SWITCHED DATA

1) X.25 Intercom Addressing (5ESS)
2) X.25 Hunting
3) International Closed User Group
4) Fast Select

The following table lists the initial set of BRI-based features. (This set is similar to "Phase 1.1" which was cited in previous filings.)

FEATURE SET FOR ISDN BRI

1.1 Standard Access
1.2 Call Control and Signaling
1.3 Local Office Supplementary Services Capabilities - Basic Access
1.4 CCS7 Signaling Interconnection - IntraLATA
1.5 Interworking Capabilities

Ongoing efforts at Telcordia supported by BellSouth expand the scope of ISDN capabilities to TRs that include the PRI (23B+D) and additional capabilities targeted mostly for PBX applications. (This set is similar to "Phase 1.2" which was cited in previous filings):

FEATURE SUMMARY FOR ISDN PRI

2.1	Standard Access
2.2	Call Control and Signaling
2.3	Local Office Supplementary Service Capabilities - Basic Access
2.4	CCS7 Signaling Interconnection-InterLATA Basic Access
2.5	Other Service Capabilities

ESP REQUESTS MET BY ISDN

Standard ISDN capabilities are now being developed in the multi-stage National ISDN process. National ISDN -1 and 2 are currently available in most switches. National ISDN will be enhanced on a going forward basis with National ISDN upgrades. ESP requested services may appear in one of the stages of National ISDN development. Many ISDN capabilities could be of significant use to ESPs. The "ESP Request Analysis" at the end of this report enumerates several ESP requests that may be met by the use and development of ISDN.

ADVANCED INTELLIGENT NETWORK

The Advanced Intelligent Network (AIN) provides a platform that will allow the development and deployment of new services faster than is possible in the current network environment. AIN provides for the use of service logic programs or databases residing on a network computer platform (Service Control Point or Service Node) which interacts with various network elements, such as end-office switches. A new service can be activated via this network computer once the prerequisite common interfaces have been established at the switches (Service Switching Points). AIN reduces the dependence on service-specific software deployment in every end office switch where a new service is to be deployed. It also enables the development of one service application which can be activated simultaneously on different vendors' switches rather than depending on separate switch development schedules.

BellSouth will use the Service Management System, a key Operations System supporting AIN, to administer the Service Control Point (SCP) memory, to manage SCP and Service Node (SN) data, network traffic and customer records, and to manage the subscription to AIN services.

Currently tariffed AIN services are described in this report. Proposed AIN services and associated deployment plans are described in Report #11 of this Annual Report.

AIN DEPLOYMENT PLANS

BellSouth continues to pursue an evolving AIN through a series of enhancements based on market need. This evolution started with AIN 0.0 deployment, which began in the second half of 1992. Since that time, BellSouth has continued to update its architecture and develop numerous AIN associated services.

As previously reported, the first service to utilize AIN was the Caller ID Deluxe service. Caller ID - Deluxe is tariffed in all nine states.

A more recent use of the AIN infrastructure is associated with BellSouth's deployment of an intelligent traffic routing and control solution. This network routing arrangement provides redirection of data related dial-up traffic off of the PSTN. The routing is transparent to network switches and operations systems, while providing more efficient utilization of interoffice facilities. At this time, BellSouth is using this routing solution in more than 50 cities.

As to AIN architecture, BellSouth previously reported on the installation of AIN Service Control Points (SCPs) in the following cities to serve the nine state region: Atlanta, GA; Nashville, TN; Jacksonville, FL; Birmingham, AL; Orlando, FL; West Palm Beach, FL; New Orleans, LA; Charlotte, NC; and Greenville, SC. As some of these SCPs are now *manufacturer discontinued*, BellSouth has begun deploying new platforms in the same cities as our STP Gateways to

increase efficiency. These regional STP locations are: Atlanta, GA; Nashville, TN; Jacksonville, FL; Birmingham, AL; West Palm Beach, FL; and Greenville, SC.

Existing AIN service nodes (SNs) are also *manufacturer discontinued.* BellSouth plans to begin the SN replacement process during 2001. Replacement locations have yet to be determined. As previously reported, the existing SN locations are Atlanta GA, Nashville TN, West Palm Beach, FL, New Orleans, LA, Orlando, FL, Charlotte, NC, Miami, FL, Ft. Lauderdale, FL, and Birmingham, AL.

In connection with plans to offer several new AIN associated services (e.g., Privacy Director, Talking Call Waiting, Internet Call Waiting and Simultaneous Ring), BellSouth has begun adding new AIN Compact Service Nodes (CSN) to service the nine state region. These nodes are being deployed in 28 of 38 Local Access Transport Areas (LATAs).

As previously reported, Service switching points (SSPs), which have been established in all LATAs allow customers throughout BellSouth's service area to obtain selected SCP and SN based applications.

TARIFFED AIN ASSOCIATED SERVICE

Most initial AIN services involve screening and routing of calls based on customer provided parameters. Screening of calls may involve playing announcements and collecting additional information such as Personal Identification Numbers (PIN) for security. Routing of calls may be based on a number of subscriber specified criteria such as time of day, day of week, and originating location or calling number. These general capabilities are used to develop services which meet many needs of ESPs and other customers. Following are descriptions of tariffed AIN services.

ADWATCH®

AdWatch is an AIN service application which provides capabilities similar to that provided through existing switch based remote call forwarding applications. Utilizing a "virtual" telephone number with no loop or central office switching equipment, AdWatch service will allow subscribers to route calls made to a local telephone number to an alternate location capturing call tracking information in the process. Such capability may be important to ESPs and end users who have a need to track calls to a specific number. AdWatch service is tariffed in eight of the nine BellSouth states.

BELLSOUTH® AIN SMS ACCESS SERVICE

BellSouth's AIN SMS Access Service[1] provides the capability to access the AIN network in an efficient and flexible manner unaided by BellSouth personnel or the service order process. AIN SMS Access Service will allow subscribers to activate, deactivate or modify AIN service subscription information.[2] AIN SMS Access Service may also be used by subscribers to confirm the manner in which AIN services are configured. Types of AIN subscriber data which may be modified by AIN SMS Access Service include time-of-day parameters, day of week parameters, forward-to numbers, calling number recognition controls and certain call screening qualifications.

Security requirements are very critical for AIN SMS Access Service users and will not be optional. BellSouth offers security for AIN SMS Access Service access against computer hackers, accidental mistakes and unauthorized access. To ensure such protection, AIN SMS Access Service supports access security and data security. Third parties will not be allowed to access other service providers' data. For tracking purposes, AIN SMS Access Service will keep a record of system access on a per-user basis which includes date and log-in identifier. This information will be available through AIN SMS Access Service user reports.

One AIN SMS Access Service optional security feature will allow the subscriber to select which users are granted access to SMS, to limit the specific commands users may execute, and to define what system support mechanisms specific users may access.

AIN SMS Access is approved in the General Subscriber Service Tariffs for Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, and South Carolina. It is also approved in the intrastate access tariffs for Alabama, Florida, Georgia, Kentucky, Mississippi, and South Carolina. BellSouth previously reported its plans to file an interstate access tariff, pending FCC approval of a Part 69 waiver. BellSouth has re-evaluated this service and interstate access tariff filing plans have been deferred.

BELLSOUTH® AIN TOOLKIT SERVICE

The AIN Toolkit Service[3] allows subscribers to access SS7 call information and AIN processing capabilities to create customized telephone services to meet the needs of end users.[4] AIN Toolkit developed services will use AIN capabilities in BellSouth's public telephone network to determine how to handle a call. While certain services will establish all call handling parameters

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[1] AIN SMS Access Service was formerly known as PortEDGE℠.

[2] BellSouth's SMS will interface only with services provided in association with BellSouth's AIN network or AIN service platforms. The SMS will not be capable of updating information stored on third party SCPs or SNs.

[3] Service was formerly known as DesignEDGE℠ Service.

[4] AIN Toolkit Service will provide the Phase I logical interconnection capabilities described in BellSouth's July 7, 1993 filing of Supplemental Comments in FCC Docket 91-346 (pp. 10-12).

at the time of service creation, some AIN Toolkit based services may or may not require direct interaction with the caller or the called party on a "real time" basis.

AIN Toolkit Service subscribers will create services by using a set of tools (i.e., a service creation environment) that allows them to configure AIN capabilities. Once a service has been verified for network and service integrity, it will be distributed to elements (SCPs) in BellSouth's network and will be available for implementation on BellSouth's end-users' lines.[5] Service activation and deactivation will be at the service developer's discretion.[6]

The service creation environment of AIN Toolkit Service is a graphical programming environment that allows service developers to assemble network capabilities into a meaningful progression (i.e., a service). Services developed with AIN Toolkit must use the BellSouth provided programming language. Each service begins with a designated entry point in the AIN call model.[7] After defining the service entry point, the service developer is free to attach any combination of action and decision commands which are pertinent to that entry point. It is the service developer's responsibility to address each possible progression of the service.

Using AIN Toolkit Service, a service developer will be able to assemble and create a service/application from "scratch".

The AIN Toolkit subscriber will access the service creation environment on the Service Management System (SMS) through a secured remote access network. The CPE of the AIN Toolkit Service subscriber will be a personal computer or work station using X terminal software. Within the service creation environment, the service developer will utilize the graphical programming language to select commands necessary to create the desired service. After completion of the service creation process, the service logic will be validated, provisioned and deployed in the SCP by BellSouth.

AIN Toolkit is approved in the General Subscriber Service Tariffs for Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, and South Carolina. It is also approved in the intrastate access tariffs for Alabama, Florida, Georgia, Kentucky, Mississippi, and South Carolina. BellSouth previously reported its plans to file an interstate access tariff, pending FCC

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[5] The initial validation of the service logic is part of the overall mechanism required to meet network security and reliability standards as discussed as the process of "mediation" in BellSouth's Supplemental Comments in Docket 91-346 (pp. 15 -23).

[6] Using guidelines approved by the FCC and state regulators, BellSouth currently has methods and procedures in place to ensure that interexchange carriers, customer premises equipment vendors and enhanced service providers have proper authorization to modify end user service configurations. These same principles are expected to apply to AIN service creation opportunities.

[7] Because the technology in AIN Toolkit is new and complex and because BellSouth's switch vendors may be implementing Telcordia's AIN Release 0.1 in inconsistent ways, AIN Toolkit, may not be able to control all aspects of the AIN 0.1 call model as specified by Telcordia. AIN 0.1 triggers planned for availability with AIN Toolkit include: Origination Attempt (off-hook immediate), Information Collected (off-hook delay), Information Analyzed (Public Office Dialing Plan or PODP, Feature Code, and Customized Dialing Plan), and Termination Attempt.

approval of a Part 69 waiver. BellSouth has re-evaluated this service and interstate access tariff filing plans have been deferred.

BELLSOUTH® STAR 98 ACCESS SERVICE

This capability will offer a subscriber to any voice messaging provider's service the ability to quickly reach his or her voice mailbox by using a common vertical service dialing code. Specifically, a voice messaging subscriber may activate this feature from the line with which the voice messaging service is associated simply by picking up the telephone handset and dialing "*98". On activation of this feature, a call path will be established between the subscriber and the subscriber's voice messaging platform (or telephone answering service provider), where the subscriber will be able to retrieve messages and perform other message management tasks. This method of access is in lieu of dialing the specific access numbers for individual subscribers' respective voice messaging providers.

The new access feature will operate by connecting a subscriber to the local telephone number of his or her voice messaging provider via Call Forwarding Don't Answer or Call Forwarding Don't Answer - Ring Control. BellSouth began deploying this capability in September 1999. The capability is now tariffed in all nine BellSouth states.

BELLSOUTH® PRIVACY DIRECTOR® SERVICE

Privacy Director service provides Caller ID subscribers with the ability to identify unavailable, unknown, blocked and private numbers. Privacy Director intercepts all unidentified calls before the subscriber's phone rings. If the call is from a private number, the caller will be asked to press 1 to deliver his/her calling information. If the call is unknown, the caller will be asked to state their name. Once the calling party is identified, Privacy Director rings the subscriber and announces the calling party's information. The subscriber has the option to accept the call, reject the call, or send a 'Do Not Solicit' message to a telemarketer.

Privacy Director is approved in the General Subscriber Service Tariffs for Florida and Georgia. BellSouth plans to tariff this service in its remaining states by the end of 2000.

BUSYCONNECT

BusyConnect is an optional network feature that enables callers to retry a busy line on demand. When a caller receives a busy condition, the service allows the caller the option of completing the call when the called line becomes available. If the caller activates BusyConnect service, the status of the called party's line will be monitored for thirty minutes and completed if the line becomes available. BusyConnect is tariffed in all nine states.

CALLER ID - DELUXE

Caller ID - Deluxe allows the subscriber to view the calling party's name on a display device or integrated set before the call is answered. Caller ID - Deluxe is a hybrid IN/1 and AIN service which works with IN/1 service logic at the AIN SCP and requires service specific IN/1 SSP software at the subscriber's serving central office. It has been developed as an AIN application, but does not use the AIN call model. As indicated above, this service is tariffed in all nine BellSouth states.

CRISISLINK[SM]

CrisisLink service allows the customer to establish a predetermined alternate routing plan for their incoming voice and data traffic for use during emergency situations. In the event of a crisis at the customer location or a service interruption between the serving wire center and the customer location, the customer would contact a CrisisLink representative to activate their alternate routing plan. Activation will route incoming traffic to alternate numbers or announcements preselected by the customer. Once the crisis is over, the customer can return to their normal call routing arrangements by notifying their CrisisLink representative.

The alternate routing plan is created by the customer working with a company representative at the time the service is established. The plan is loaded into an AIN SCP where it remains dormant until activated in crisis. Customer plans may be modified by the customer at any time. CrisisLink is tariffed in all nine BellSouth states.

DATAREACH[SM]

BellSouth's DataReach[8] service provides single number access to an enhanced service provider's data network. The service uses a public office dialing plan trigger. Based upon the wire center where the call originates, the call is forwarded to a subscriber-designated location within the originating LATA. Such access allows data service providers to offer more ubiquitous access to their data networks with all transport charges billed to the data service provider rather than the calling party.

DataReach was tariffed and effective in all nine states, however, due to lack of demand and technological issues, BellSouth has retired the service in eight states and has grandfathered it in the remaining state.

500 SERVICE ACCESS CODE (SAC) CARRIER IDENTIFICATION ACCESS SERVICE (500 AS)

The 500 SAC service supports carrier's offering of non-geographic telephone numbers for end-users that allow them to be accessed anytime and anywhere. 500 Access Services provide for the

[8] DataReach[sm] Service was formerly identified as LATA-wide Access to ESP Data Networks.

interconnection between 500 Service providers and the existing wireline network. This service is effective in the interstate access tariff and in the intrastate access tariffs in all nine BellSouth states.

FLEXIBLE CALL FORWARDING

Flexible Call Forwarding (FCF) provides customer enhancements to existing switch based call forwarding services by utilizing AIN call control capabilities. FCF capabilities center on three main functional areas: forwarding options, call screening and call rescue.

Forwarding options allow the subscriber to easily and accurately select where calls will be forwarded. Through a touchtone menu, the subscriber can choose to send their calls to the line they are calling from, a specific phone number or a predetermined location from a customer established list (speed list). Menu options also allow subscribers to confirm their current forwarding option and to un-forward all calls.

BellSouth provides two types of call screening with FCF: 1) an audio version of Calling Name, and 2) a "hot code" or access code screening. The audio screening capabilities are based upon a verbalization of calling party information and a list of options by which the subscriber can control call termination. The access code screening requires callers to enter a three digit access code prior to call completion. With this service, callers not entering the validated access code are routed to default treatment selected by the subscriber.

Call rescue capability associated with FCF provides an AIN counterpart for switch based capabilities such as Call Forward Busy Line and Call Forward Don't Answer. This capability allows transfer of calls to another phone number or the subscriber's voice mail system. Subscribers may set the number of rings prior to call rescue treatment via menu functionality.

FCF builds upon technical capabilities trialed by BellSouth during 1994 in Atlanta with a third party cellular provider. Based upon results of that trial, the service has been modified such that it can work from existing telephone numbers.

FCF is tariffed and available in all nine states.

GOVERNMENT EMERGENCY TELECOMMUNICATIONS SERVICE (GETS)

Government Emergency Telecommunications Service will use AIN functionality to facilitate telecommunications of federal officials during emergency situations. To activate the service, the caller will dial a special 10-digit number. The calling party number will be replaced with the GETS number to indicate to the network that the call requires special treatment. The key feature of the service is that calls placed to the GETS number will be offered to multiple Interexchange Carriers (IECs) in an ordered sequence that is pre-determined by the customer. This feature is intended to minimize the chance that a call cannot be completed due to unavailability of the presubscribed IEC. Alternatively, the caller may dial a Carrier Identification Code (CIC).

BellSouth currently has an effective interstate access tariff for this service.

INTERNET CALL WAITING

This service will utilize AIN functionality to allow customers of Internet Access Providers to receive notification of incoming calls on their personal computer screen during an active Internet session. Customers may dispose of the call by terminating the session and answering the call, temporarily placing the call on hold, or by forwarding the call. BellSouth completed its technical trial and has begun deployment of this capability. Internet Call Waiting Service has been tariffed in Florida, Georgia, and Mississippi. BellSouth plans to tariff this service in its remaining states during the second quarter of 2000.

ZipCONNECT℠

BellSouth's ZipCONNECT[9] service performs as an AIN routing service which allows ESPs and end users flexibility in directing incoming calls to specific subscriber designated locations. Such capability gives ESPs and end users the functionality necessary to route calls made to a single telephone number to multiple locations based upon parameters such as time of day or the calling party's location. Currently, ZipCONNECT service is only tariffed and available on a grandfathered basis.

AIN 0.0 DEPLOYMENT

Table 5 in Report #4 summarizes the projected deployment of AIN 0.0 capabilities in BellSouth central office switches. These projections are based on current plans, but are subject to change due to financial, regulatory, market or other considerations.

AIN 0.1

Implementation of AIN 0.1 begins the second phase of AIN in BellSouth. AIN 0.1 provides evolutionary AIN capabilities such as additional "Points-in-Call" where call processing can be interrupted and a query sent to the SCP.

The potential AIN 0.1 services that BellSouth is pursuing are described in Report #11 of this Annual Report.

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[9] ZipCONNECT℠ Service was formerly identified as AIN Routing - Area Number Calling)

AIN 0.1 DEPLOYMENT

Table 6 in Report #4 summarizes the projected deployment of AIN 0.1 capabilities in BellSouth switches. Actual deployment is based on market demand, therefore these projections are still considered as preliminary.

AIN 0.2

Scheduled delivery of capabilities based upon AIN 0.2 technical requirements is in development and resultant deployment projections have not yet been determined.

AIN AND THE ONA FRAMEWORK

BellSouth continues to develop AIN in coordination with the objectives of ONA. New BSAs will be made available to ESPs under tariff as they are developed. New BSEs based on AIN will be developed based on inputs from the ESP and information services industry. As these new BSEs are developed they will be offered on an unbundled basis.

BellSouth will continue to participate in industry forums dealing with AIN in order to incorporate a wide range of inputs to the design of AIN capabilities which will satisfy a future regulatory framework for intelligent networks.

ESP REQUEST ANALYSIS

ESPs submitted 118 requests for ONA services prior to the BOCs' February 1, 1988 ONA Plan filings with the Commission. (See BOC ONA Special Report #1, Issue 2, October 1987). BellSouth has responded to many of these with enhancements to available technology. This section discusses the remaining requests in the context of the new technologies presented in this report. Only those requests that apparently can benefit from these new technologies are analyzed here.

The number preceding each entry below is the network capability request number from the October, 1987 BOC ONA Special Report #1. Each entry includes the full description of the network capability, a description of the ESP need, and the new technology analysis.

In several entries below it is concluded that the requested service could be provided if specific developments are done on top of the underlying technologies (e.g., developing specific Service Logic Programs (SLPs) on top of AIN.) In all those cases there may be unforeseen circumstances (such as feature interactions) that may prevent the development from succeeding. In addition, for several requests it may be possible to provide the desired feature without any of the technologies described in this report, such as through new switch based features. This section makes no claim that the scenarios provided below are in any sense the most efficient. Full technical and business analyses (including legal, regulatory, network security and public policy considerations, as well as the Commission's four selection criteria) must be performed before any specific developments are undertaken. The following Table summarizes 34 ESP requests that apparently can be addressed with CCS7, ISDN or AIN. Some requests involve more than one of those technologies.

Mapping of ESP Requests to Technologies

Technology	ESP Requests	Total
CCS7	18, 29, 55, 64, 110	5
ISDN	29, 42, 50, 51, 52, 53, 57, 70, 110	9
AIN	12, 14, 18, 23, 29, 39, 42, 44, 54, 55, 57, 59, 62, 77, 78, 91, 92, 94, 97, 98, 99, 102,105,108,110,117,118	27

12. MONITOR & BARGE IN

This is the capability for ESP clients to monitor their own calls being forwarded to the ESP and to barge in and join the conversation if they desire.

The benefit of this capability is that it would allow ESP clients flexibility in answering their calls and would minimize ESP involvement in calls when the ESP clients decide to cut in on and handle them themselves.

This service is currently outside the scope of AIN SCP capabilities. However, depending on the details of the service, it could be done by routing the call to an ISDN interface and employing a switching fabric and call bridging capability on the ESP side of the interface. At present monitor and barge in are restricted to some business group offerings. Extending the scope of such capabilities may require further investigation into the potential for misuse and for insuring users' privacy.

14. SMDI WITH AUTOMATIC RINGBACK

This is the capability for the ESPs to ring back their clients as soon as their clients' lines are idle via SMDI (Message Desk).

One benefit to the ESP is illustrated by the following: the client has Call Forwarding Busy Line, receives a call that forwards to the ESP, the ESP takes a message for the client, the client goes back on hook and the ESP automatically rings back the client so the message can be delivered. It saves the ESP having to send a message waiting indication to the client and saves the client from having to dial a call to the ESP.

This service may be possible with an AIN Service Node and the capabilities provided by AIN 0.2. Further clarification of the service request is needed to determine if the needed functionality could be provided with AIN 0.1 or AIN 0.2.

18. ESP NOTIFICATION OF ESP'S CLIENT OR BOC CONTROL ACTION

This is an optional capability to provide notification in real time of any Custom Calling Service actions made by an ESP's client or the BOC that may affect an ESP's messaging service.

The benefit to the ESP would be notification of changes that could affect its service.

At present there seems to be no obvious way of conveying this information to the ESP. Part of the problem is that at present CCS7 does not support the proper set of messages to convey this kind of information. Even if proper messages were developed for carrying such information, this service would not be practical if the client updates switch based CLASS services by interacting

directly with the switch. If the change is performed via an AIN service, and the proper messages are available, then it may be possible to develop an SLP for this service.

23. DELIVERY OF THE DIALED NUMBER

This is the capability to have the BOC switch deliver the actual dialed number to the ESP at the time the call is established, even where some type of number translation is involved. (ESPs require that interim number translations have no effect on the service.)

This would allow the ESP to provide different types of services to clients using the same common attendants/interfaces, by distinguishing on the basis of the number that the client dials to reach the ESP. Additionally, in multiple call forwarding situations, this capability would allow the ESP to obtain the original calling/called number regardless of the number of times the call was forwarded. With this capability, use of DID numbers to identify customers would not be necessary.

A version of this capability may be capable with AIN 0.1 with certain limitations. It also appears that modifications to SS7 ISUP may be a way to provide this service.

29. SUPPRESSED RINGING

Suppressed power ringing would provide connection to line side access customers without applying power ringing (typically 20 Hz). This capability would provide access for meter reading or other information gathering without alerting the line side access customer. A secondary capability of suppressed ringing would allow the originator to barge in on a busy line and establish a very short CPE conversation without bothering or being noticed by parties on the call.

The benefit of this capability is that an ESP could provide a service that involves a dial-up arrangement such as remote meter reading, without ringing the customer's phone (especially useful to avoid waking up clients during the night).

This service could possibly be done with ISDN via User to User Information Parameter (actual service description and CCS7 messaging is yet to be determined).

The secondary capability described above (with barge-in) is outside the scope of currently developed or planned AIN releases. Barge-in is a planned feature that has not been developed.

As previously reported, BellSouth conducted a technical trial of this service and began investigating whether there is demand for this service at a price that customers are willing to pay. Based upon that investigation, further work on this capability has been deferred.

39. SELECTED NUMBER REVERSE BILLING RATE PERIOD SPECIFIC

This appears to be a request for the ability of the ESP to have selected ESP clients' calls billed to it on a rate period specific basis.

This would appear to allow ESPs to pay for any local measured rate charges that might normally accrue to the ESP's client for client access to the ESP.

This service is not possible with the capabilities provided by AIN 0.0 or AIN 0.1. While AIN does not impact how calls are rated, access via AIN to SS7 call set-up messages may meet ESP needs in this area. Further analysis is needed to determine switch, SS7, and billing system capabilities that may be needed to support this request.

42. ABILITY TO RETURN HELD CALL TO CUSTOMER

This request appears to be the ability for the ESP to notify a client who is on an established call, that a call has been forwarded to the ESP and, if necessary, to add that call onto the line that the ESP used to notify the client that there was a call.

This service could possibly be provided with an ESP ISDN Service Node or similar equipment which could support the handling of a call forwarded to the ESP from the client's busy line. The service node could provide Dual Tone Multi-Frequency (DTMF) call control options to the calling and/or called parties to allow selection of call hold, voice mail, busy signal, or answer. A display phone interface, either ISDN or Analog Display Services Interface (ADSI), to the ESP's client could provide notification of the held call.

The resolution to IILC Issue #030, which recommends use of a combination of complementary network services, may also address this requested capability.

44. PROVISION FOR SHARING AN ESP CLIENT AMONG ESPS

This appears to be a request for a service such as the CLASS feature Selective Call Forwarding but with more than one forward to number available.

An ESP client should be able to use the services of more than one ESP at the same time. For example, calls could be routed to different ESPs as a function of the calling number.

This service could possibly be provided with AIN 0.1, using AIN Toolkit Service, if the necessary service logic program is developed. It would also possibly require a customer profile database that would associate calling numbers to forwarding numbers.

50. B-CHANNEL SWITCHED AND DEDICATED ACCESS

This appears to be two requests: BOC ISDN customers should be able to interconnect their B-channels through the BOC ISDN switch, and BOC ISDN customers should be able to have nail-up connections between their B-channels and an ESP's B-channels.

The ESP requires access to end users over B-channels on both a switched and a non-switched basis. Both switched and non-switched B-channel connections could be available with TR-based ISDN (TR-TSY-000268). Non standard B-channel connections are available in existing switches, but compatible connections between switches are contingent upon deployment of TR-based ISDN.

51. D-CHANNEL DATA DELIVERED ON B-CHANNEL

This appears to be a request for multiple D-channel data streams to be multiplexed on a B-channel with multiplexing via TEI (Terminal End-point Identifier) mapping.

The need is for an efficient method of delivering D-channel data to the ESP.

In the current version of ISDN each B-channel is associated with exactly one D-channel. Whereas a B-channel can be used to transport packets, it is not clear how packets from nonassociated D-channels could be multiplexed into a B-channel. One approach might be to let the user establish a B-channel connection between two user locations and then request that data from different D-channels at one location be multiplexed, via an end office based packet switch, into the established B-channel. At the receiving end office the B-channel would terminate at the local packet switch which would then demultiplex the data into the corresponding D-channels at that user's location. Such an approach would require further evaluation to determine feasibility.

Some ESPs have indicated that an X.75 connection may be an adequate interim solution to their needs. X.75 connections are possible on the trunk side.

Some ESPs have indicated that Frame Relay Service may be an appropriate long term solution to the need for efficient delivery of D-channel data. Frame Relay is tariffed and effective in all nine BellSouth states and in the interstate access tariff.

52. MULTIPLE D-CHANNELS ON B-CHANNEL

This capability would multiplex data packets from a number of different D-channels onto a B-channel. 32 packets per second would be delivered over the B-channel in duplex mode thus allowing 128 logical channels.

The ESP needs this capability to concentrate traffic.

For new technology analysis, see request #51 above.

53. ESP ACCESS TO D-CHANNEL SIGNALING

This is a request to provide non-switched D-channel packet delivery to the ESP.

As a subscription option to the user, an ESP would be given access to signaling packets going between the user and the BOC switch. The ESP might modify these packets. In principle the client's D-channel could be routed directly to the ESP (without going through the D-channel processor in the switch) while a D-channel from the ESP would appear at the client's CO as the client's D-channel. It would be processed by the D-channel processor as if it were the client's original D-channel. This may require substantial modifications of ISDN. Furthermore, it may cause performance problems when the D-channel is used by the client to establish B-channel calls; the client may notice extensive call setup delays due to double processing of D-channel signaling (by the CO and the ESP) and additional routing of D-channel information (from the client's CO to the ESP and back to the client's CO). In addition to the technical difficulties and performance issues this approach also raises serious public policy and security concerns that are beyond the scope of this report. (e.g., what happens if the ESP's version of the client's D-channel signaling is incorrect or inappropriate, what happens if the ESP is overloaded or malfunctions,...)

Some ESPs have indicated that an X.75 connection to an ISDN end office may be an adequate interim solution to their needs. X.75 connections on the trunk side are possible.

Some ESPs have also indicated that a frame relay connection may be an adequate long term solution to their needs. Frame Relay is tariffed and effective in all nine BellSouth states and in the interstate access tariff.

54. FEATURE NODE SERVICE INTERFACE (FN/SI)

This is access to a service provider (previously called VFN -Vendor Feature Node) interface. This requires ESP access to the BOC's Common Channel Signaling system

This question is concerned with the status of FN/SI as a means of providing access to unbundled basic building blocks.

With its AIN development, BellSouth plans to allow third party ESPs to connect their own feature (service) nodes within AIN 0.2 implementation limitations.

55. SERVICE CONTROL POINT (SCP) DATA BASES

This request is for access to an SCP database. This requires access to the BOC Common Channel Signaling network (see "Common Channel Signaling Access").

Access to current SCP databases (such as LIDB) is possible via CCS7 using gateway STPs and TCAP, however, major reliability, security and privacy issues must be resolved before such access is made available as a general service.

57. ACCESS TO FUTURE INTELLIGENT FUNCTIONS OF ISDN

This appears to be a request for access to services offered by the Intelligent Network through ISDN access. AIN is a long term project and its interaction with ISDN customers has not yet been defined.

BellSouth is analyzing various architectures to provide ESP access to the AIN. The issue of providing ESP access to Intelligent Networks is also the subject of an FCC Notice of Inquiry on Intelligent Networks.

59. MAPPING ANI TO USER ID (X.75)

This involves a dialed connection through a voice switch with ANI delivered to the BOC PAD and relayed through the packet switch to the ESP. This requires an ANI trunk to the PAD and a PAD capable of receiving and forwarding ANI.

The ESP wants a BOC-verified identification of the calling party.

This service is not possible with the capabilities provided by AIN 0.0 or AIN 0.1. It appears to require both switch and PAD software development.

62. PEAK TRAFFIC HANDLING WITHIN EXCHANGE NETWORK

This is the real time ability to specify the maximum number of simultaneous calls to be routed to an ESP from a specific client. All additional calls from that particular ESP's client would be blocked by the exchange carrier network. Choking applies to groups of lines and trunks to an ESP location.

ESPs have requested the ability to control the amount of traffic delivered to them from one individual client so that the blocking grade of service to other clients does not suffer.

This service could possibly be provided with AIN 0.1 if the necessary SLP is developed. In this case the AIN Platform must be notified of call arrivals as well as disconnects.

64. COMMON CHANNEL SIGNALING ACCESS

Interconnection to the BOCs' CCS system. This appears to be a request to allow an ESP to have its own CCS connections to the BOCs' STP.

ESPs have requested improved methods of exchanging signaling and control information.

This is technically feasible via CCSAC service and is described in TR-394.

70. DERIVED CHANNELS COMPATIBLE WITH ISDN

This could be one of two requests: (1) Current ESP non-switched derived channel arrangements share the loop with ISDN access; (2) Current ESP client non-switched derived channel arrangements are replaced with ISDN access and CPE functions without modification.

ESPs need the ability to forward migrate from derived channel technology to ISDN Basic Access.

Multiplexing non-switched derived channels and ISDN access on the same loop is technically possible; however, the appropriate multiplexers for the CPE and the network must be developed. There are no current plans for specifying the network interface requirements for such multiplexers. Replacing non-switched derived channels with ISDN access is possible; however, non-switched derived channel CPE might have to be replaced with ISDN CPE.

77. ROUTE DIVERSITY

This is the ability for the ESP to specify a physical route that services take and to specify that some services between the same locations be designed using more than one route.

ESPs want to specify physical route diversity to maintain a certain level of service even after there is damage to one particular facility. This capability is already included in BellSouth's GSST, local Private Line, intrastate access and interstate access tariffs.

BellSouth's CrisisLink[sm] service may also meet the ESPs' needs for this capability. CrisisLink service allows the customer to establish a predetermined alternate routing plan for their incoming voice or data traffic for use during emergency situations. Tariffs for CrisisLink are effective in all nine states. An expanded description of CrisisLink is available in Report #5 of this Annual

Report. AIN Toolkit service[10] would provide the capability for an ESP to create their own version of a route diversity service similar to CrisisLink service. AIN Toolkit is approved in the General Subscriber Service Tariffs for Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, and South Carolina. It is also approved in the intrastate access tariffs for Alabama, Florida, Georgia, Kentucky, Mississippi, and South Carolina. AIN Toolkit is described in Report #5 of this Annual Report.

78. AUTOMATIC PROTECTION SWITCHING

This is the ability to monitor the integrity of a Special Access facility (usually a digital facility) and to automatically switch to a "hot stand-by" transmission system when the performance of the original facility degrades to a critical level.

ESPs have requested facilities that are protected from failure.

This capability is available in the local Private Line, intrastate special access and interstate special access tariffs.

BellSouth's CrisisLink[sm] service may also meet the ESPs' needs. (See analysis of 77 above).

91. ENABLE/DISABLE NETWORK DTMF SIGNALING

This is the ability for the BOC network to respond to a signal received from a customer (ESP or its client) by either interpreting DTMF tones as addressing information, or passively transmitting the tones to/from the subscriber and the ESP.

ESPs would like the ability to have the network passively transmit DTMF tones between ESPs and their clients.

This service could possibly be provided with AIN 0.1 if the necessary SLP is developed. Depending on the state of the call the SLP could decide if the DTMF is destined for the network or for transparent transmission. This feature may limit the client's access to other network services since at some Points In Call, the network will not interpret the client's DTMF. (For example, AIN does not monitor digits throughout the call.) In order to circumscribe this limitation the SLP could apply this feature only when the client is connected to its ESP(s). This would require a customer profile database. In this case customer DTMF may result in different action depending on whether the customer is connected to an ESP or not. Further ESP definition of this service requirement is needed.

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[10] AIN Toolkit service was formerly identified as DesignEDGE[sm].